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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,171	12/02/2003	David B. Rogers	20030624-001B	4135
34160	7590	09/26/2005	EXAMINER	
SUD-CHEMIE INC.			NGUYEN, CAM N	
1600 WEST HILL STREET			ART UNIT	PAPER NUMBER
LOUISVILLE, KY 40210			1754	

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/726,171

Applicant(s)

ROGERS ET AL.

Examiner

Cam N. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date June 01, 2005.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### **Information Disclosure Statement**

1. The information disclosure statement filed on June 01, 2005 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because *the document nos. 2003/0012719 and 2003/0195115 cited on the PTO-1449 Form are not recognized U.S. patent application serial numbers*. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

### **Claim Objections**

2. Claims 2-3, 7, 10-11, 15-16, & 18 are objected to because of the following informalities:
- A. In claims 2, 10, 15, line 1, "up" should be deleted.
  - B. In claim 10, line 1, "is" should be deleted.
  - C. In claims 3, 11, 16, line 1, "plus" should be deleted and replaced thereof with – and--.

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D. In claims 3, 11, 16, line 2, it is suggested that applicants insert --, in total-- after "catalyst".

E. In claims 7 & 18, line 2, "a combination thereof" should be changed to -- combination thereof-- or --combinations thereof--.

Appropriate correction is required.

### **Double Patenting**

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of **copending Application No. 10/726,147** (hereinafter copending '147). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

The difference between the claimed catalyst and that of the copending

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'147, is that the instant catalyst uses the anatase type titanium dioxide doped with lanthanum oxide for the support; whereas, the copending '147 catalyst uses the rutile titanium dioxide for the support.

It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have substituted the rutile type titanium dioxide of the copending '147 with the anatase type titanium dioxide because substitution of one for another equivalence for the same purpose involves only a matter of choice.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

**Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6 & 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al., "hereinafter Komatsu", (US Pat. 6,121,191) taken together with Eri et al., "hereinafter Eri", (US Pat. 4,801,573).

Komatsu discloses a photocatalyst supported ultra-fine particles, wherein the ultra-fine metal particles selected from the group consisting of Pt, Au, Pd, Rh, Ru and Ag, etc. supported on fine particles of a rutile type titanium dioxide (see col. 25, claim 1).

Komatsu does not disclose rhenium and lanthanum. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated rhenium and lanthanum into the catalyst of Komatsu in order to achieve a promoted catalyst, which promotes the production of products with higher boiling points while maintaining or improving catalytic activity, because it is known to use rhenium to make catalysts and lanthanum is recognized as a useful catalyst promoter among other catalyst promoters, as evidenced by Eri (see Eri at col. 3, ln 60-68).

With respect to the "anatase titanium dioxide support" being claimed. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have controlled the heating temperature to less than 600°C during the preparation of the titanium dioxide in Komatsu in order to result in the titanium dioxide support having the anatase crystal structure as desired because there is a discussion in the Komatsu reference that when heated to approximately 600°C or higher, all anatase type titanium dioxide undergoes a phase transition to a rutile type, etc. (see Komatsu at col. 5, ln 5-19).

Regarding claims 2, 10, & 15, the claims are met by the teaching of Eri because he discloses the catalyst includes a small amount of a metal oxide promoter in an amount of between about 0.1 and 5 wt.%, and more preferably between about 0.2 and 2 wt.%, based on the weight of the finished catalyst (see Eri at col. 6, ln 60-65). The disclosed concentrations fall within the claimed concentrations.

Regarding claims 3-6, 11-12, & 16-17, Komatsu does not disclose the platinum concentration. However, Eri discloses rhenium is utilized in the amount ranging from about 0.5 to 50 wt.% (see Eri at col. 12, claim 4). It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have predetermined optimum amounts of platinum and rhenium in Komatsu in order to achieve an effective catalyst, because of *In re Boesch*.

7. Claims 7-8 & 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al., "hereinafter Komatsu", (US Pat. 6,121,191), as applied to claims 1-6 & 9-17 above, and further in view of Tang et al., "hereinafter Tang", (US Pat. 6,019,954).

Komatsu discloses a catalyst as described above, except for the additive and its concentration.

It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated such known additive into the catalyst of Komatsu in order to achieve a promoted catalyst because molybdenum and rare earth metals including cerium are known catalyst promoters, as evidenced by Tang (see Tang at col. 3, ln 45-53). Tang discloses that the amount of molybdenum can be used in an amount of 2.0 to 20.0 wt. %, and the amount of rare earth metals can be used in an amount of 0 to 10 wt.%.

**Citations**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. All references are cited for related art. See PTO-892 Form prepared attached.

**Conclusion**

9. Claims 1-19 are pending. Claims 1-19 are rejected. No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M, W, R, & F, 9:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

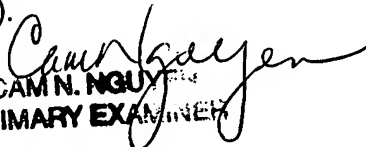


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen/cnn

September 19, 2005

  
CAM N. NGUYEN  
PRIMARY EXAMINER

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